BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Construction and the Built Environment Pearson BTEC International Level 3 Foundation Diploma in Construction and the Built Environment Pearson BTEC International Level 3 Diploma in Construction and the Built Environment Pearson BTEC International Level 3 Extended Diploma in Construction and the Built Environment Pearson BTEC International Level 3 Diploma in Building Services Engineering Pearson BTEC International Level 3 Extended Diploma in Building Services Engineering
Unit number and title	Unit 16: Provision of Primary Services in Buildings
Learning aim(s) (For NQF only)	**Learning aim A**: Examine the practices associated with the provision of hot- and cold-water systems **Learning aim B**: Examine the principles and approaches associated with the provision of above- and below-ground drainage systems
Assignment title	**Providing water and drainage services to a dwelling**
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You are working as a trainee engineer in a company which specialises in design and installation of building services in both domestic properties and commercial sectors. You are working with the team which deals with domestic properties. The senior management as well as your team leader is concerned that the quality of design documents has significantly dropped lately causing more site queries than ever before. The site staff has also reported on number of occasions about design inefficiencies in the overall pipe layouts and position of fittings and fixtures, resulting in material wastage and increased project costs. The management has lost some confidence in the proposed designs as there are no evaluations carried out by the design engineers, of the possible alternatives. The management is taking actions to remedy the situation on short term basis. However, they believe that other long terms solutions are required. One of these is to produce guidance documents which all employees would use during design and installation of services. As you achieved very high grades in your BTEC qualification and have demonstrated an excellent attitude towards work, the management considers that you are the appropriate person to undertake this task.

	You will assume a 3/4 bedroom detached two-storey house. On the ground floor, there is a kitchen which has a sink and a dishwasher as well as a large refrigerator which dispenses water and require cold water connection. The cloakroom has a toilet and wash hand basin only. There is also a utility room on this floor where a washing machine and sink is provided. On the first floor, master Bedroom has an en-suite with shower cubicle, WC and a wash hand basin. The family bathroom is also on first floor which has bath, separate shower cubicle, wash hand basin and a WC.
Task 1	Produce a document called *Guidance Document – Water Supply Systems*, using a suitable format as suggested by your line manager. The document will contain illustrations, sketches, line diagrams and photos. Within this well referenced document, include the following: • Service pipe details • Detailed discussion of principles relating to distribution and layout of cold and hot water by direct and indirect systems, supported with illustrations, sketches and diagrams. • Examples of where direct and indirect systems might be suitable. • Comprehensive line drawings for the given scenario showing pipe layout, materials used, dimensions, capacities of fittings and components. This drawing must be annotated with details. This will include drawings for hot and cold water services. • Good and bad examples of layouts and positioning of fittings and components. Please support these examples with a clear rationale. • A comparison of materials used against other available options giving advantages and advantages.
Checklist of evidence required	A well referenced word-processed document using a suitable referencing style such as Harvard. Line drawings, covering hot and cold water services, showing pipes, fittings and fixtures and annotated with details of sizes, materials, capacities and dimensions etc. Sketches/illustrations of good and bad layouts and positioning. Illustrations/sketches to support the discussions

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria, you must show that you are able to:
A.P1	Explain, with appropriately annotated illustrations, the distribution and layout of cold water by direct and indirect systems.
A.P2	Explain, with appropriately annotated illustrations, the distribution and layout of hot water by direct and indirect systems.
A.M1	Analyse, with clear and accurate line drawings, the distribution of hot- and cold-water systems in terms of materials used, and the dimensions and capacities of fittings and components and their relative positioning.
A.D1	Evaluate, with detailed and comprehensive line drawings, the distribution of hot- and cold-water systems in terms of materials used, and the dimensions and capacities of fittings and component, and their efficient positioning
Task 2	Produce a document called *Guidance Document – Above and Below Ground Drainage*, using a suitable format as suggested by your line manager. The document will contain illustrations, sketches, line diagrams and photos. Within this well referenced document, include the following: • Design considerations for above and below ground drainage • Detailed discussion of principles relating to single stack and two pipe systems. Please provide example of their suitability. • Detailed discussion of principles relating to separate and combined systems. Please provide example of their suitability. • Comprehensive line drawings for the given scenario showing pipe layout, falls, materials used, dimensions and capacities, for both above and below ground drainage. These drawings must be annotated with relevant details. • Good and bad examples of layouts and positioning of fittings and components. Please support these examples with a clear rationale. • A comparison of materials used against other available options giving advantages and advantages.
Checklist of evidence required	A well referenced word-processed document using a suitable referencing style such as Harvard. Line drawings showing layout, components, fittings and annotated with details of falls, sizes, materials, capacities and dimensions. Sketches/illustrations of good and bad layouts and positioning.

	Illustrations/sketches to support the discussions

Criteria covered by this task:	
Unit/ Criteria reference	To achieve the criteria, you must show that you are able to:
B.P3	Explain, with appropriately annotated illustrations, the distribution and layout of above-ground drainage systems.
B.P4	Explain, with appropriately annotated illustrations, the distribution and layout of below-ground drainage systems.
B.M2	Analyse, with clear and accurate line drawings, the distribution of above- and below-ground drainage systems in terms of materials used, appropriate falls, and the dimensions and capacities of fittings and components and their relative positioning.
B.D2	Evaluate, with detailed and comprehensive line drawings, the distribution of above- and below-ground drainage systems in terms of materials used, appropriate falls, and the dimensions and capacities of fittings and components and their efficient positioning.

Sources of information to support you with this Assignment	**Books** Burberry, P, *Environment and Services (Mitchells Building Series),* (8th edition), Routledge, 2015, ISBN 9781138167780. This book explains principles of services installations and environmental considerations and is relevant to the content of this unit. Greeno, R, *Building Services Handbook* (8th edition), Routledge, 2015, ISBN 9781138805637. As the name suggests, a handbook covering all aspects of building services in a concise manner. **Journals** *Building Services Engineering Research & Technology (BSERT),* Sage Publishing This is CIBSE's quarterly journal containing useful research relevant to all aspects of building services engineering. http://journals.sagepub.com/home/bse *P & HE Journal,* Chartered Institute of Plumbing and Heating Engineers (CIPHE) This is CIPHE online journal which covers a broad range of areas relating to plumbing and heating. http://www.ciphe.org.uk/professional-members/publications/ **Websites** http://www.cibse.org/ This is the website of Chartered Institute of Building Services Engineers (CIBSE) which is the professional body for building service engineers. The website contains information about the codes, products and industry updates.

	http://www.modbs.co.uk/ This is the website of Modern Building Services (MBS) covering a wide range of building services engineering sectors. http://www.bsee.co.uk/ This is the website of Building Services and Environmental Engineer (BSEE). It is an industry journal published monthly and contains in depth technical features on subjects relating to building services. http://www.ciphe.org.uk/ This is the website of Chartered Institute of Plumbing and Heating Engineers (CIPHE) which is the relevant professional body. The website contains information about the codes, products and industry updates. **Above are examples of resources. Further useful resources may be found at** qualifications.pearson.com/en/support/published-resources.html
Other assessment materials attached to this Assignment Brief	*N/A*